Valhalla VM spec

Instruction set

- `rd` = destination register,
- `rs` = source register,
- `im` = immediate value,
- `ad` = memory address (label)

Value	Opcode	Description
0x00	`NOP`	Do nothing.
0x01	`HCF`	Halt and catch fire. Stops execution of instructions.
0x02	`MOV rd rs`	Sets `rd` to the value of `rs`.
0x03	`SET rd im`	Sets `rd` to `im`.
0x04	`GET rd rs`	Sets `rd` to the value of memory at location `rs`.
0x05	`STR rd rs`	Sets the memory at location `rd` to the value of `rs`.
0x06	`ADD rd rs`	Adds the values of `rd` and `rs` and stores the result in `rd`.
0x07	`SUB rd rs`	Subtracts `rs` from `rd` and stores the result in `rd`.
0x08	`MUL rd rs`	Multiplies the values of `rd` and `rs` and stores the result in `rd`.
0x09	`DIV rd rs`	Divides `rd` by `rs` and stores the result in `rd`.
0x0A	`MOD rd rs`	Divides `rd` by `rs` and stores the modulo in `rd`.
0x0B	`OR rd rs`	Sets `rd` to bitwise or of `rd` and `rs`.
0x0C	`AND rd rs`	Sets `rd` to bitwise and of `rd` and `rs`.
0x0D	`XOR rd rs`	Sets `rd` to bitwise xor of `rd` and `rs`.
0x0E	`NOT rd`	Negates `rd`.
0x0F	`SHL rd rs`	Left shifts bits stored in `rd` by `rs` positions.
0x10	`SHR rd rs`	Right shifts bits stored in `rd` by `rs` positions.
0x11	`PRI rd`	Reads the value stored in `rd` as integer and prints it on the screen.
0x12	`PRS ad`	Prints characters starting from location `ad` until null byte (0x00).

Value	Opcode	Description
0x13	`CMP rd rs`	Compares numbers stored in `rd` and `rs`.
0x14	`JMP ad`	Jumps to address `ad`.
0x15	`JEQ ad`	Jumps to address `ad` when last comparison was equal.
0x16	`JLT ad`	Jumps to address `ad` when last comparison was less than.
0x17	`JGT ad`	Jumps to address `ad` when last comparison was greater than.
0x18	`JLE ad`	Jumps to address `ad` when last comparison was less or equal.
0x19	`JGE ad`	Jumps to address `ad` when last comparison was greater or equal.
0x1A	`JNE ad`	Jumps to address `ad` when last comparison was not equal.
0x1B	`RED rd`	Blocks; Reads integer from `stdin` to `rd`.
0x1C	`RND rd`	Draws random number from 0 to 255 and saves it in `rd`.